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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,881	10/19/2001	Tuomo Syvanne	BER-024	8294

26717 7590 04/06/2005

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EXAMINER	
ISMAIL, SHAWKI SAIF	

ART UNIT	PAPER NUMBER
2155	

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/032,881	SYVANNE, TUOMO	
	Examiner	Art Unit	
	Shawki S Ismail	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *October 19, 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-27 are presented for examination.

Applicant's claim for foreign priority is acknowledged.

References in applicant's IDS form 1449 have been considered.

Claim Objections

The claims are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim Rejections - 35 USC §102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-27 are rejected under 35 U.S.C. 102(e) as being anticipated by **Adelman et al.,** (Adelman) U.S. Patent No. **6,078,957.**

4. As to claim 1, Adelman teaches a method for handling dynamic state information used for handling data packets, which arrive at a network element node of a network element cluster, said network element cluster having at least two nodes and each node

handling separate sets of data packets (col. 5, lines 3-15), said method comprising the step of:

maintaining (206) in a node a first, node-specific data structure (557, 558, 559) comprising entries representing state information (520) needed for handling sets of data packets handled in said node (col. 6, lines 21-29), characterized in that said method further comprises the step of:

maintaining (208) in said node in addition to said node-specific data structure a second, common data structure (554, 555, 556) comprising at least entries representing state information (520) needed for handling sets of data packets handled in one other node of said network element cluster, the contents of said common data structure effectively differing from the contents of said node-specific data structure (col. 6, lines 21-29).

5. As to claim 2, Adelman teaches a method according to claim 1, characterized in that it further comprises the steps of:

allocating (200) to each node belonging to said network element cluster certain node-specific distribution identifiers, each node having separate node-specific distribution identifiers allocated to it (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27),

handling at least a plurality of data packets so that a data packet is handled (204) in that node of said network element cluster, to which node a distribution identifier calculated (202) using certain field(s) of said data packet is allocated (col. 9, line 51 – col. 10 line 27), and

maintaining (212) in a plurality of entries of said node-specific and common data structures distribution information (510) relating to the distribution identifier, which corresponds to the set of data packets related to the respective entry col. 9, line 51 – col. 10 line 27).

6. As to claim 3, Adelman teaches a method according to claim 2, characterized in that it further comprises the steps of:

reallocating (605, 606, 607) said distribution identifiers to the nodes of said network element cluster (col. 9, line 51 – col. 10, line 22; col. 10 lines 46-50),

if said reallocation results in a new distribution identifier being allocated to a node, said new distribution identifier being a distribution identifier not allocated to said node at the time of the reallocation, identifying (612) in the common data structure of said node the entries corresponding to said new distribution identifier, and adding (613) said entries to the node-specific data structure of said node (col. 9, line 51 – col. 10, line 22; col. 10 lines 46-50), and

if said reallocation results in an old distribution identifier not being allocated to a node anymore, said old distribution identifier being a distribution identifier allocated to said node at the time of the reallocation, identifying (615) in the node-specific data structure of said node the entries corresponding to said old distribution identifier, and clearing (616) said entries from the node-specific data structure of said node (col. 9, line 51 – col. 10, line 22; col. 10 lines 46-50).

7. As to claim 4, Adelman teaches a method according to claim 2, characterized in that it further comprises the steps of:

adding (400) a new entry to said node-specific data structure in a first node (col. 8, lines 36-49, col. 8, lines 24-30),

communicating (402) said new entry at least to a second node of the network element cluster (col. 8, lines 36-49, col. 8, lines 24-30), and

adding (403) an entry corresponding to said new entry to the common data structure of said second node (col. 8, lines 36-49, col. 8, lines 24-30).

8. As to claim 5, Adelman teaches a method according to claim 4, characterized in that it further comprises the step of:

adding (401) an entry corresponding to said new entry to the common data structure of said first node (col. 8, lines 36-49, col. 8, lines 24-30).

9. As to claim 6, Adelman teaches a method according to claim 1, characterized in further maintaining (210) in said common data structure of said node entries representing state information needed for handling sets of data packets handled in said node (Fig. 5, col. 6, lines 21-29).

10. As to claim 7, Adelman teaches a method according to claim 1, characterized in that said state information comprises the source address field (521a) and/or the destination address field (521b) of an Internet Protocol header, and/or port header fields (522a, 522b) of a Transmission Control Protocol header and/or port header fields (522a, 522b) of a User Datagram Protocol header, and/or the identifier header field of an Internet Control Message Protocol header, and/or a Message Identifier field (524) of an Internet Security Association and Key Management Protocol header, and/or an Initiator Cookie field (525) of an Internet Security Association and Key Management Protocol

header, and/or the Security Parameter Index field (523) of a security header relating to the IPSec protocol suite, and/or a Session ID field (526) relating to the Secure Sockets Layer protocol, and/or an HTTP Cookie field (527) relating to the Hypertext Transfer Protocol (col. 9, line 51 – col. 10, line 22; col. 10 lines 46-50).

11. As to claim 8, Adelman teaches a method according to claim 1, characterized in that said state information comprises information (528) identifying an authenticated entity (col. 6, lines 40-47).

12. As to claim 9, Adelman teaches a method according to claim 1, characterized in that said state information comprises information (523) identifying a secured tunnel, within which data packets of the corresponding set are tunneled (Fig. 1).

13. As to claim 10, Adelman teaches a method according to claim 2, characterized in that said distribution identifier is a hash value (512) and a hash function is used for calculating a hash value using certain field(s) of a data packet (col. 9, line 51 – col. 10, line 22; col. 6 lines 21-27).

14. As to claim 11, Adelman teaches a method according to claim 2, characterized in that said distribution information is said distribution identifier (511) (col. 9, line 51 – col. 10, line 22; col. 6 lines 21-27).

15. As to claim 12, Adelman teaches a method according to claim 2, characterized in that said distribution information is information needed for calculating said distribution identifier for the corresponding data packet (col. 9, line 51 – col. 10, line 22; col. 6 lines 21-27).

16. As to claim 13, Adelman teaches a method according to claim 2, characterized in that said certain field(s) for calculating a distribution identifier comprise the source address field (521a) and/or the destination address field (522b) of an Internet Protocol header, and/or port header fields (522a, 522b) of a Transmission Control Protocol header ,and/or port header fields (522a, 522b) of a User Datagram Protocol header, and/or the identifier header field of an Internet Control Message Protocol header, and/or a Message Identifier field (524) of an Internet Security Association and Key Management Protocol header, and/or an Initiator Cookie field (525) of an Internet Security Association and Key Management Protocol header, and/or the Security Parameter Index field (523) of a security header relating to the IPSec protocol suite, and/or a Session ID field (526) relating to the Secure Sockets Layer protocol, and/or an HTTP Cookie field (527) relating to the Hypertext Transfer Protocol (col. 0 line 51 – col. 10, line 27).

17. As to claim 14, Adelman teaches a network element node (700) of a network element cluster having at least two nodes, said node (700) comprising

first storage means (704) (see Fig. 5, col. 6, lines 21-29), and

means (702) for maintaining in said first storage means (704) a first, node-specific data structure (551, 552, 553) comprising entries representing state information (520) needed for handling sets of data packets handled in said node (see Fig. 5, col. 6, lines 21-29), characterized in that said node further comprises:

second storage means (708) (see Fig. 5, col. 6, lines 21-29), and

means (706) for maintaining in said second storage means (708) a second, common data structure (554, 555, 556) comprising at least entries representing state information needed for handling sets of data packets handled in one other node of said network element cluster, the contents of said common data structure effectively differing from the contents of said node-specific data structure (see Fig. 5, col. 6, lines 21-29).

18. As to claim 15, Adelman teaches a network element node (700) according to claim 14, characterized in that:

said means (702) for maintaining the node-specific data structure are adapted to add a new entry to said node-specific data structure in said first storage means (704), and to communicate said new entry to said means (706) for maintaining common data structure,

said means (706) for maintaining the common data structure are adapted to communicate said new entry at least to one other node of the network element cluster, and in that

said means (706) for maintaining the common data structure are further adapted to receive an entry from at least one other node of the network element cluster and to add an entry corresponding to said received entry to said common data structure in said second storage means (708).

19. As to claim 16, Adelman teaches a network element node (700) according to claim 15, characterized in that:

said means (706) for maintaining the common data structure are further adapted to add a new entry received from said means (702) for maintaining the node-specific data structure to said common data structure in said second storage means (708).

20. As to claim 17, Adelman teaches a network element node (700) according to claim 14, characterized in that it further comprises:

means (710) for receiving distribution identifiers, which are currently allocated to said node, said distribution identifiers being used for handling at least a plurality of data packets so that a data packet is handled in that node of said network element cluster, to which node a distribution identifier calculated using certain field(s) of said data packet is allocated (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and

third storage means (712) for storing said distribution identifiers (see Fig. 5, col. 6, lines 21-29), and in that

said means (702, 706) for maintaining the node-specific and common data structures are adapted to maintain in a plurality of entries of said node-specific and common data structures in said first and second storage means (704, 708) distribution information relating to the distribution identifier, which corresponds to the set of data packets related to the respective entry (see Fig. 5, col. 6, lines 21-29).

21. As to claim 18, Adelman teaches a network element node according to claim 17, characterized in that:

said means (710) for receiving distribution identifiers are adapted to receive reallocated distribution identifiers (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and

said means (706) for maintaining the common data structure are adapted to detect a new distribution identifier being allocated to said node due to the reallocation, said new distribution identifier being a distribution identifier not allocated to said node at the time of receiving reallocated distribution identifiers, and to identify in the common data structure the entries corresponding to said new distribution identifier, and to communicate said entries to said means (702) for maintaining the node-specific data structure for said entries to be added to the node-specific data structure (col. 9, line 51 – col. 10 line 22, col. 10 lines 46-50), and

said means (702) for maintaining the node-specific data structure are adapted to detect an old distribution identifier not being anymore allocated to said node due to the reallocation, said old distribution identifier being a distribution identifier allocated to said node at the time of the reallocation, and to identify in the node-specific data structure the entries corresponding to said old distribution identifier, and to clear said entries from the node-specific data structure (col. 9, line 51 – col. 10 line 22, col. 10 lines 46-50).

22. As to claim 19, Adelman teaches a network element node (700) according to claim 14, characterized in that said first storage means (704) is a portion of kernel space memory (see Fig. 5, col. 6, lines 21-29).

23. As to claim 20, Adelman teaches a network element node (700) according to claim 14, characterized in that said second storage means (708) is a portion of user space memory (see Fig. 5, col. 6, lines 21-29).

24. As to claim 21, Adelman teaches a network element node (700) according to claim 14, characterized in that said first storage means (704) is a portion of content addressable memory (see Fig. 5, col. 6, lines 21-29).

25. As to claim 22, Adelman teaches a network element node (700) according to claim 14, characterized in that said first storage means (704) part of a cryptographic card (see Fig. 5, col. 6, lines 21-29).

26. As to claim 23, Adelman teaches a network element cluster (800) having at least two network element nodes (700), at least one of said nodes (700) comprising

first storage means (704) (see Fig. 5, col. 6, lines 21-29), and

means (702) for maintaining in said first storage means (704) a first, node-specific data structure (551, 552, 553) comprising entries representing state information needed for handling sets of data packets handled in said node (see Fig. 5, col. 6, lines 21-29), characterized in that said at least one node further comprises:

second storage means (708) (see Fig. 5, col. 6, lines 21-29), and

means (706) for maintaining in said second storage means (708) a second, common data structure (554, 555, 556) comprising at least entries representing state information needed for handling sets of data packets handled in one other node of said network element cluster, the contents of said common data structure effectively differing from the contents of said node-specific data structure (see Fig. 5, col. 6, lines 21-29).

27. As to claim 24, Adelman teaches a network element cluster (800) according to claim 23, characterized in that it further comprises:

means (802) for allocating to each node belonging to said network element cluster certain node-specific distribution identifiers, each node having separate node-specific distribution identifiers allocated to it, said distribution identifiers being used for handling at least a plurality of data packets so that a data packet is handled in that node of said network element cluster, to which node a distribution identifier calculated using certain field(s) of said data packet is allocated (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and in that said at least one node further comprises:

means (710) for receiving distribution identifiers, which are currently allocated to said node (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and

third storage means (712) for storing said distribution identifiers (see Fig. 5, col. 6, lines 21-29), and in that said

means (702, 706) for maintaining the node-specific and common data structures are adapted to maintain in a plurality of entries of said node-specific and common data structures in said first and second storage means (704, 708) distribution information relating to the distribution identifier, which corresponds to the set of data packets related to the respective entry (see Fig. 5, col. 6, lines 21-29).

28. As to claim 25, Adelman teaches a network element cluster according to claim 24, characterized in that:

said means (802) for allocating distribution identifiers are adapted to reallocate distribution identifiers to the nodes of said network element cluster (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and in that in said at least one node said

means (710) for receiving distribution identifiers are adapted to receive reallocated distribution identifiers (col. 6, lines 21-29, col. 9, line 51 – col. 10 line 27), and said

means (706) for maintaining the common data structure are adapted to detect a new distribution identifier being allocated to said node due to the reallocation, said new distribution identifier being a distribution identifier not allocated to said node at the time of receiving reallocated distribution identifiers, and to identify in the common data structure the entries corresponding to said new distribution identifier, and to communicate said entries to said means (702) for maintaining the node-specific data structure for said entries to be added to the node-specific data structure (col. 9, line 51 – col. 10, line 22, col. 10, lines 46-50), and said

means (702) for maintaining the node-specific data structure are adapted to detect an old distribution identifier not being anymore allocated to said node due to the reallocation, said old distribution identifier being a distribution identifier allocated to said node at the time of the reallocation, and to identify in the node-specific data structure the entries corresponding to said old distribution identifier, and to clear said entries from the node-specific data structure (col. 9, line 51 – col. 10, line 22, col. 10, lines 46-50).

29. As to claims 26 and 27, they are a computer program products directed to the method of claim 1; therefore they are rejected under the same rationale.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawki S Ismail whose telephone number is 571-272-3985. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shawki Ismail
Patent Examiner
March 28, 2005

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SUPERVISORY PATENT EXAMINER